CIS 4930/6930-002: Data Visualization (Spring 2017)

Project 2: Drawing Basic Charts in Processing

(Adapted from an assignment created by Carlos Scheidegger)

1 Objectives

In this assignment you will learn the basics of Processing, and create a few Processing sketches that implement basic visualizations. These will be building blocks for future assignments, so take care to use good software engineering practices. You will create 3 sketches.

2 Ground Rules

This assignment is intended to be done alone. You may ask others for help with figuring out how details of Processing. However, code must be your own (MOSS will be used!). Furthermore, NO additional libraries (such as giCentre utilities) may be used. Doing so will result in a 0 for those sketches.

3 Assignment Instructions

- Download and familiarize yourself with Processing (http://processing.org/download/). Use the available tutorials (http://processing.org/tutorials/) and examples (http://processing.org/examples/) to help you understand how Processing works.

- Create a data file. Your data file should be a csv format file (http://www.computerhope.com/issues/ch001356.htm). The file should contain the following headers {YEAR, VALUE0, VALUE1, PARTY} and values $\big[$\{1992, 7.30, 88, DEM\}, \{1996, 5.60, 43, DEM\}, \{2000, 4.00, 76, REP\}, \{2004, 5.70, 90, REP\}, \{2008, 5.00, 12, DEM\}, \{2012, 8.30, 14, DEM\}, \{2016, 4.90, 50, REP\}$\big]$.

- Create a sketch with 600x600 resolution that opens a file dialog box (http://processing.org/reference/selectInput_.html) and loads a selected csv data file.

- With the given data file, draw a BAR CHART for the data (you get to pick which variables to use).
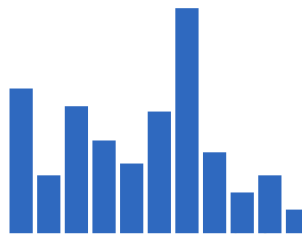
- Create a 2nd sketch (same resolution and dialog box), and draw a LINE CHART for the data (again you get to pick which variables to use).

- Create a 3rd sketch (same resolution and dialog box), and draw a LINE CHART on top of a BAR CHART with the data.
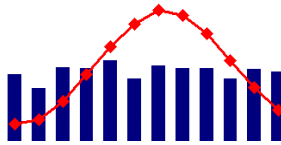
- Modify your sketches such that they use additional visual channels to encode additional variables. Consider using color, size, shape, depth, etc. Your selection and their implementation will have an impact on your grade.

- Add embellishments of your choice. These can include but are not limited to: axis lines, labels, and tick marks. Consider the margins for your embellishments (try to pick good values for the tick marks and a good number of them—not too many and not too few). Your selection and their implementation will have an impact on your grade.

- Make your visualizations robust by designing them to support any data (number of elements or value range) and by designing them to support any size or aspect ratio of canvas.

4   Submission

Please submit your data file and sketches in a single zip file on Canvas by the start of class on the due date. Make sure things are labeled well, so that your peers can find them.

5   Grading and Feedback

- Your grade will be combination of objective measures (based on the assignment instructions) and subjective grading by the instructor.

- Peer Review will be used to provide feedback. You will review 3 of your peers' submissions, and 3 of your peers will review your work. This should be taken very seriously as it is the primary form of feedback you'll receive.